

## CLAIMS

1. A high flux X-ray source comprises:  
a sealed X-ray tube;  
5 an optic housing containing a multi-layer optic for collecting and focussing X-rays generated in the sealed X-ray tube, wherein the multi-layer optic is located at a predetermined distance from the sealed X-ray tube and the optic housing is adjustable relative to the sealed X-ray tube; and,  
an X-ray beam conditioner, the beam conditioner being adjustable relative to  
10 the optic housing.
2. An X-ray source according to claim 1, wherein the multi-layer optic is a confocal mirror.
- 15 3. An X-ray source according to claim 1, wherein the multi-layer optic is a sagittal mirror.
4. An X-ray source according to any of claims 1 to 3, wherein the optic housing is adjustable relative to the sealed X-ray tube by independent rotation in each of a first  
20 pair of substantially orthogonal directions.
5. An X-ray source according to claims 1 to 4, wherein the optic housing is adjustable relative to the sealed X-ray tube by independent translation in each of a second pair of substantially orthogonal directions.  
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6. An X-ray source according to any preceding claim, further comprising a shutter housing adapted to receive a portion of the optic housing.
7. An X-ray source according to any preceding claim, wherein the optic housing  
30 is filled with an inert gas.
8. An X-ray source according to claim 7, wherein the inert gas is helium.

9. An X-ray source according to any preceding claim, further comprising a moveable X-ray beam stop.

10. X-ray irradiation apparatus comprising an X-ray source according to any preceding claim, and means for holding a sample in the path of the focussing X-rays.